

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF HAWAII

In the Matter of )

PUBLIC UTILITIES COMMISSION )

Docket No. 2008-0274

Instituting a Proceeding to Investigate )  
Implementing a Decoupling Mechanism )  
for Hawaiian Electric Company, Inc., and )  
Hawaii Electric Light Company, Inc., and )  
Maui Electric Company, Limited. )  
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**HAIKU DESIGN AND ANALYSIS**

**RESPONSES TO INFORMATION REQUESTS TO THE PARTIES**

**TRANSMITTED BY THE COMMISSION ON MARCH 5, 2009**

Carl Freedman, dba Haiku Design and Analysis (HDA) respectfully offers the following responses (HDA Responses) to the information requests transmitted by the Commission to the parties in this docket on March 5, 2009. HDA responds below to the questions numbered 24 through 26 labeled "IR's for other Parties".

- 24. At the technical workshop, the participants discussed that the proposed decoupling adjustment would create a bias for the utility to overstate test year sales and for rate increase opponents to understate test year sales. Please discuss.**

**Response:**

A properly designed decoupling mechanism should eliminate any bias for the utility to understate or overstate test year sales in the context of a rate case. One principle purpose of a decoupling mechanism is to make a utility ambivalent to fluctuations in sales volumes (with respect to short term earnings). One benefit of a properly designed decoupling mechanism is that it should eliminate the traditional gaming incentive for a utility to understate the assumed test year sales volumes used to denominate rates.

At the February 13, 2009 technical workshop in this docket HDA gave a brief presentation explaining HDA's proposed example decoupling mechanism. Part of that explanation addressed the use of average base fuel and purchased energy costs versus short run marginal production costs in decoupling calculations. This is one difference between HECO's proposal and HDA's example mechanism. HDA asserted that the HECO mechanism would not properly decouple earnings from sales volumes and, among other things, would result in higher earnings if rate case test year sales are overstated. In particular, HDA asserted that by using average costs rather than actual expected marginal costs to characterize the change in HECO's variable production costs resulting from changes in sales volume, the HECO mechanism would overstate collection of net revenues to meet its fixed costs and bias the decoupling calculations. HECO and the Consumer Advocate workshop attendees pointed out that the existing Energy Cost Adjustment Clause

(ECAC) might affect HDA's analysis and possibly address HDA's concerns. HDA acknowledged this possibility and promised to further examine the interaction of the ECAC with the proposed decoupling mechanisms.

After the February 13, 2009 technical workshop HDA prepared several expository spreadsheets and has had two telephone conferences and a follow up call with HECO staff discussing details regarding the decoupling mechanisms and related existing rate design components. Based on these discussions it appears that, for the purchased energy component of energy costs and revenues, the existing ECAC quarterly and annual reconciliations fully pass through and account for the differences between average and marginal costs about which HDA expressed concern. For the utility generation component of energy costs and revenues, however, the differences are not fully resolved. It thus appears that the magnitude of the issue asserted by HDA may be less than originally thought (by at least the fraction of energy provided by purchased energy) but the issue is still not fully resolved. HDA has not had sufficient opportunity since the most recent discussions to examine in detail the effects of the ECAC reconciliations on HECO's proposed decoupling mechanism.

HDA intends to continue its examination and discussion with HECO and other interested parties regarding interactions between the proposed decoupling mechanisms and (1) the treatment of fuel and purchased energy costs and how these are included with and/or differentiated from fixed costs in base rates, (2) actual fuel and purchased energy costs, (3) actual revenues collected by various tariffs, surcharges and mechanisms, (4) reconciliations

and adjustments made by various existing and proposed mechanisms. Although these interactions are not straightforward, HDA believes that it should be possible for the parties to ultimately agree regarding a workable treatment. There seems to be agreement regarding the objectives and intended result of the decoupling aspect of the proposed mechanisms (even though there may be significant differences regarding the "recoupling" or RAM proposals).

Because of the complexity of the interactions of various rate design components with the proper workings of a decoupling mechanism, HDA proposes that at some point in this docket there should be a thorough numerical demonstration and verification of how the proposed decoupling mechanisms work in conjunction with all related rate design features. As explained below, the information filed in HECO's pending rate case provides one convenient basis for a meaningful demonstration and verification.

Attached to these responses are two attachments explained briefly below. These are provided for two reasons. First, the attachments demonstrate the nature of the concerns expressed by HDA at the February 13, 2009 technical conference (prior to any consideration of the effects of existing ECAC reconciliations). Second, and most important, the attachments show that the information provided in HECO's pending rate case provides a propitious opportunity to examine and demonstrate the workings, accuracy and efficacy of any proposed decoupling mechanisms. HECO's pending rate case includes two completely configured test year scenarios, one filed in its direct testimonies (direct case) and one filed in a later update (update case). One principal difference between the direct and update

cases is a substantial difference between the assumed test year sales volumes. The calculated estimates of projected fuel and purchased energy estimates differ between the two cases only with respect to (a) the assumed test year sales volumes and (b) an essentially insignificant difference in biodiesel prices.<sup>1</sup>

The two completely configured test year scenarios (direct case and update case) provide a good basis for a resolute demonstration of the accuracy and efficacy of the decoupling mechanisms. For purposes of the demonstration, the direct case test year information is assumed to be the basis for determining rates (and decoupling parameters) in the context of a rate case. The update case test year information is assumed to characterize what actually happens in the year after a rate case (which, of course, is different than the rate case assumptions). A well designed decoupling mechanism should provide accurate recovery of target net revenues to cover fixed costs regardless of the differences in sales volume between the rate case assumptions (the direct case) and later actual circumstances (the update case).

Attachment 2 to HDA's Responses is a spreadsheet that demonstrates and compares the application of HECO's proposed decoupling mechanism and the HDA example mechanism based on the information in HECO's pending rate case.<sup>2</sup> Attachment 1 to HDA's Responses shows the source of supporting information consisting of two pages from HECO's update case in its pending rate case showing. Page 1 of Attachment 1 shows the

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<sup>1</sup> Biodiesel fuel accounts for less than 0.05 percent of HECO's test year fuel mix.

<sup>2</sup> Please note that this attachment does not take into account several factors, such as the existing ECAC reconciliation adjustments, that are ultimately necessary to consider in evaluating the proposed decoupling mechanisms.

test year sales assumptions and the resulting calculated fuel expenses for the direct and update cases. Page 2 of Attachment 1 shows the calculated purchased energy expenses for the direct and update cases.

**25. Sales decoupling, the RAM and REIS as proposed, each either reduce total risk or shift the risk of a utility not achieving the authorized rate of return to customers. Given the changes in risk associated with these revenue adjustment mechanisms please explain:**

- a. Why should the utility be allowed to retain any earnings in excess of the authorized rate of return rather than these earnings in excess of the authorized level being allocated to the benefit of customers? Please suggest a mechanism that could allocate these earnings to customers?**

**Response:**

The Consumer Advocate has proposed a mechanism to “return” or “share” earnings in excess of the authorized rate of return. HDA has not taken a specific position regarding the Consumer Advocate’s proposal but does support this or some similar sort of ratepayer protections in light of the substantial shifts in risks to utility customers that would result if HECO’s proposed mechanisms are adopted.

Note that the Consumer Advocate’s proposal would not disallow “any” and all retention in earnings above the authorized rate. The proposal would provide progressive limitations but never complete refund. One reason to allow at least some earnings above authorized limits, even if the fraction is small, is to maintain, at all levels of earnings, at least some incentive for the utility to control costs.

- b. Please discuss the effect the reduction and shift in risk should have on the utilities' authorized rate of return.**

**Response:**

Reductions in utility risk should result in reductions in utility financing costs and in the utilities' authorized rate of return. This is true whether the reduction in risk to the utility is an overall reduction in risk or is a shift in risk from the utility to ratepayers. HDA has not quantified the extent of reductions or shifts in risks resulting from the proposals in this docket and has not quantified any impacts on the utilities' authorized rate of return.

- 26. Please compare the regulatory cost associated with the proposed RAM and rate cases every two years.**

**Response:**

This is a good question but HDA does not have a good response at this point in the docket. The proposed RAM would provide for a rate case for each utility each three years with RAM adjustments in at least two of each three years. There would be some additional complexity in each rate case to incorporate prior RAM adjustments into test year assumptions and to determine prospective RAM parameters. The proposed RAM would also require some additional customer protections such as those proposed by the Consumer Advocate. HDA has not determined the costs or regulatory agency staff requirements associated with the RAM annual adjustments, the impacts on the complexity of each rate case or the establishment of necessary ratepayer protections. HDA is still trying to assess what level of regulatory scrutiny would be required for the annual RAM adjustments.

**SUMMARY OF RESULTS**

	<b>HECO Direct Testimony (A)</b>	<b>HECO Update (B)</b>
<b>Total Fuel Oil Expense (\$000)</b>	<b>\$ 809,058</b>	<b>\$ 776,579</b>
<b>Total Fuel Related Expense (\$000)</b>	<b>\$ 7,596</b>	<b>\$ 7,454</b>
<b>Total Fuel Expense (\$000)</b>	<b>\$ 816,654</b>	<b>\$ 784,033</b>
<b>Test Year Sales (GWH)</b>	<b>7,657.8</b>	<b>7,484.7</b>
<b>Test Year Company Use (GWH)</b>	<b>16.1</b>	<b>16.1</b>
<b>Test Year Losses (GWH)</b>	<b>379.7</b>	<b>371.1</b>
<b>Net System Input (GWH)</b>	<b>8,053.6</b>	<b>7,871.9</b>
<b>Purchased Power (GWH)</b>	<b>3,345.6</b>	<b>3,335.8</b>
<b>Net HECO (GWH)</b>	<b>4,708.0</b>	<b>4,536.1</b>
Central Station	4,702.6	4,532.4
Substation DG	5.4	3.8
<b>Total Central Station Net Heat Rate (BTU/Net KWH)</b>	<b>10,635</b>	<b>10,618</b>
<b>Steam Net Heat Rate (BTU/Net KWH)</b>	<b>10,547</b>	<b>10,551</b>
<b>Diesel Net Heat Rate (BTU/Net KWH)</b>	<b>23,457</b>	<b>23,381</b>
<b>Biodiesel Net Heat Rate (BTU/Net KWH)</b>	<b>19,236</b>	<b>19,271</b>
<b>Total Central Station Sales Heat Rate (BTU/KWH Sales)</b>	<b>0.011185</b>	<b>0.011166</b>

As a part of this filing, HECO T-4 is submitting a complete set of its exhibits and workpapers which contains both updated exhibits and workpapers and those that have not changed from direct testimony. Exhibits and workpapers that have been updated are labeled as "UPDATED" (e.g. HECO-401 (UPDATED)). The Summary of Results shown above will also be submitted as a new workpaper:

<b>Item</b>	<b>Description</b>	<b>Reason</b>
HECO-WP-415 (see page 121)	Summary of Results	Provides high-level comparison of Direct Testimony and Update

In addition, the P-MONTH input data files that were used in the production simulation for the rate case update are also being provided. Please refer to the electronic files because these files

Hawaiian Electric Company, Inc.

TOTAL PURCHASED POWER EXPENSES  
Recorded 2007, 2009 Test Year Estimate @ Direct and Rate Case Update  
(In Dollars)

	Reference	2007 Recorded	2009 Test Year Estimate @ Direct	Adjustment	2009 Test Year Estimate @ Rate Case Update
Energy Payments	HECO-607	\$261,963,245	\$369,123,533	-\$2,184,838	\$366,938,695
Firm Capacity Payments	HECO-608	\$106,847,767	\$107,931,947	-\$51,378	\$107,880,569
Total Purchased Power Expenses		\$368,811,012	\$477,055,480	-\$2,236,216	\$474,819,264

Note:

Totals may not add due to rounding.

### Decoupling Example Comparison Worksheet

Basic Case: Assumes Existing ECAC Properly Adjusts Fuel Price and Purchased Energy Cost Effects

Line			Direct	Update	Increment
A	Total Fuel Expense	HECO T-4 2 of 121 (Update)	\$816,654,000	\$784,033,000	-\$32,621,000
B	Purchased Energy Expense	HECO-601 (Update)	\$369,123,533	\$366,938,695	-\$2,184,838
C	Total Fuel and Purch Energy	(A+B)	\$1,185,777,533	\$1,150,971,695	-\$34,805,838
D	TY Non Fuel/Purch Energy (Fixed)	Approximate for Example	\$750,000,000	\$750,000,000	\$0
E	Example Test Year Rev. Requirement	(C+D)	\$1,935,777,533	\$1,900,971,695	-\$34,805,838
F	Test Year Sales	HECO T-4 2 of 121 (Update)	7657.8	7484.7	-173.1
G	Total Average Rate \$/MWH	(E*.001/F)	\$252.79	\$253.98	
H	Average Rate Fuel and Purch Energy	(C*.001/F)	\$154.85	\$153.78	\$201.07
J	Average Rate Non-Fuel & Penergy	(D*.001/F)	\$97.94	\$100.20	

#### IF RATES ARE BASED ON DIRECT CASE BUT UPDATE SALES ACTUALLY OCCURS

K	Actual Revenues	(G from Direct * F from Updated)		\$1,892,020,437	-\$43,757,096
L	Fuel and Purch Energy Expense	(C)		\$1,150,971,695	
M	Net to Cover Fixed Costs	(K - L)		\$741,048,742	
N	Revenue Surplus (+) or Shortfall (-)	(M - D)		-\$8,951,258	

#### HECO DECOUPLING ADJUSTMENT

P	Revenue Target	(D)		\$750,000,000	
Q	Actual Revenue Applied to Target	(F from Update * J from Direct)		\$733,046,697	
R	HECO Decoupling Adjustment	(P - Q)		\$16,953,303	
S	Net to Cover Fixed Costs	(K + R - L)		\$758,002,044	
T	Revenue Surplus (+) or Shortfall (-)	(S - D)		\$8,002,044	

#### HDA DECOUPLING ADJUSTMENT

U	Short Run Marginal Energy Cost	(H Incremental = C*.001/F)	\$201.07		
V	Fixed Margin	(G from Direct - U)	\$51.71		
W	Decoupling Adjustment	(F Increment * V from Direct)		\$8,951,258	
X	Net to Cover Fixed Costs	(K + W - L)		\$750,000,000	
Y	Revenue Surplus (+) or Shortfall (-)	(X - D)		\$0	